

Example from profile Rolling Mill

Fig. 1

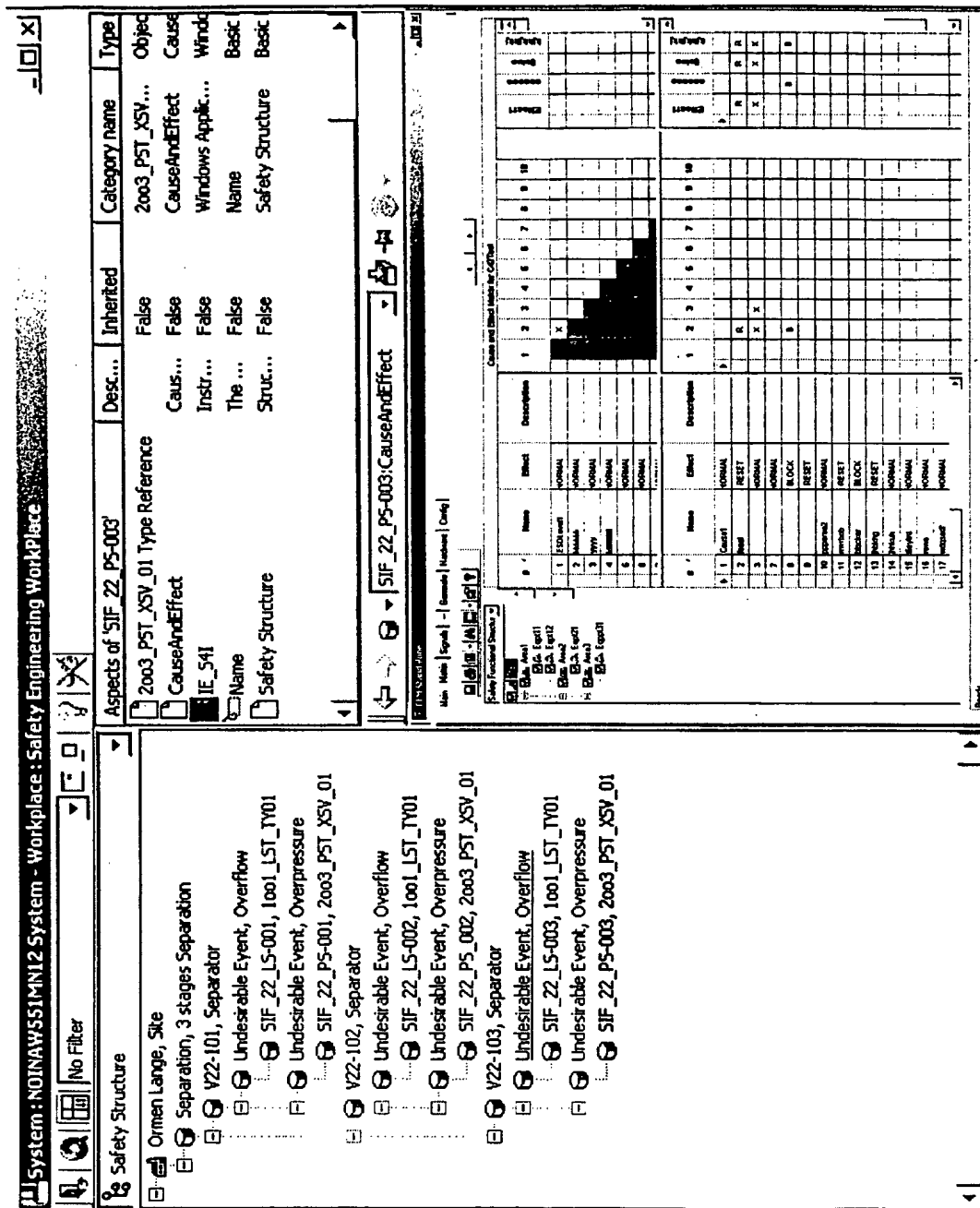
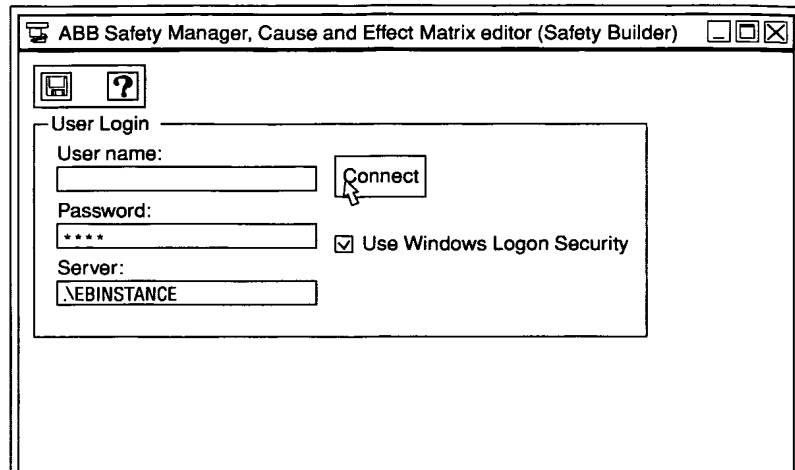
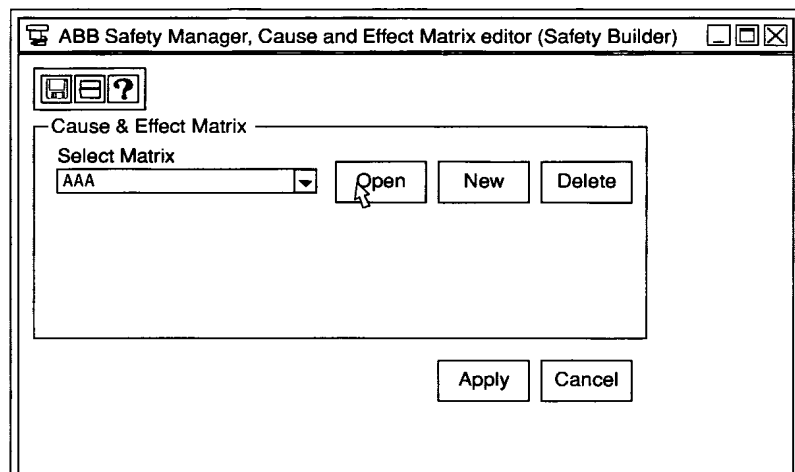


Fig. 2

1



2



3

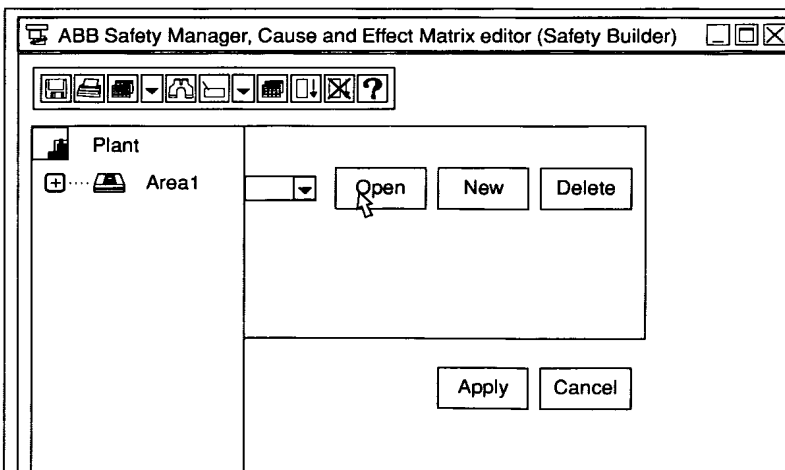


Fig. 3

4

ABB Safety Manager, Cause and Effect Matrix editor (Safety Builder)

Plant
+ Areal1

Cause and Effect Matrix for AAA

#	Name	Description	Designation	1	2	3	4	Effekt
1	ESDLevel1		ZLEV1					X
2								
3								
4								
5								
6								
7								

#	Name	Description	Designation	1	2	3	4	Effekt
1	Cause1		ZCAU1	X				X
2	reqsfs							
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								

5a

ABB Safety Manager, Cause and Effect Matrix editor (Safety Builder)

Plant
+ Areal1

Cause and Effect Matrix for AAA

#	Name	Description	Designation	1	2	3	4	Effekt
1	ESDLevel1		ZLEV1					X
2								
3								
4								
5								
6								
7								

#	Name	Description	Designation	1	2	3	4	Effekt
1	Cause1		ZCAU1	X				X
2	reqsfs							
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								

Create Cause
Delete Effect
Level
Block
Reset
Area or Equipment

Fig. 3 cont.

ABB Safety Manager, Cause and Effect Matrix editor (Safety Builder)

Show all Levels only
Hide levels

Plant
Area1

Cause and Effect Matrix for AAA

#	Name	Description	Designation	1	2	3	4	Effekt
1	ESDLevel1		ZLEV1					X
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								

Cause and Effect Matrix for AAA

#	Name	Description	Designation	1	2	3	4	Effekt
1	Cause1		ZCAU1	X				X
2	regsfs							
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								

5b

ABB Safety Manager, Cause and Effect Matrix editor (Safety Builder)

Show signals
Hide signals
Collapse signals

Plant
Area1

Cause and Effect Matrix for AAA

#	Name	Description	Designation	1	2	3	4	Effekt
1	ESDLevel1		ZLEV1					X
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								

Cause and Effect Matrix for AAA

#	Name	Description	Designation	1	2	3	4	Effekt
1	Cause1		ZCAU1	X				X
2	regsfs							
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								

5c

#	Name	Description	Designation	1	2	3	4	Effekt
1	Cause1		ZCAU1	X				X
2	regsfs							
3								
4								
5								
6								

6

Fig. 3. cont.

6

Cause and Effect Matrix for AAA									
#	Name	Description	Designation	1	2	3	4	Effekt	
1	ESDLevel1		ZLEV1						X
2									
3									
4									
5									
6									
7									
#	Name	Description	Designation	1	2	3	4	Effekt	
1	Cause1		ZCAU1	X					X
2	regsfs								
3									

7a

CEM Cause: Cause1

Variable 3 Signals

Name: Cause1 Area: Plant

Designation: ZCAU1 Delay (s): 0

Designation:

Active: NORMAL

Latchable: ☐ < Play Next >

Blockable: ☐ Position no: 1

7b

CEM Cause: Cause1

Variable 3 Signals

Input Datatype: bcol Confirmation criteria: 1 Signals out of: 3

Signals U			
Name	Description	Assign	Normal
Samplecolla1	Sample signal	IX0.11.1.1	ND
Samplecolla2	Sample signal	Unassigned	ND
Samplecolla3	Sample signal	Unassigned	ND

Show available signals OK Apply Cancel

Edit Cause 11/2/2003 S 48 Pm

Fig. 3. cont.

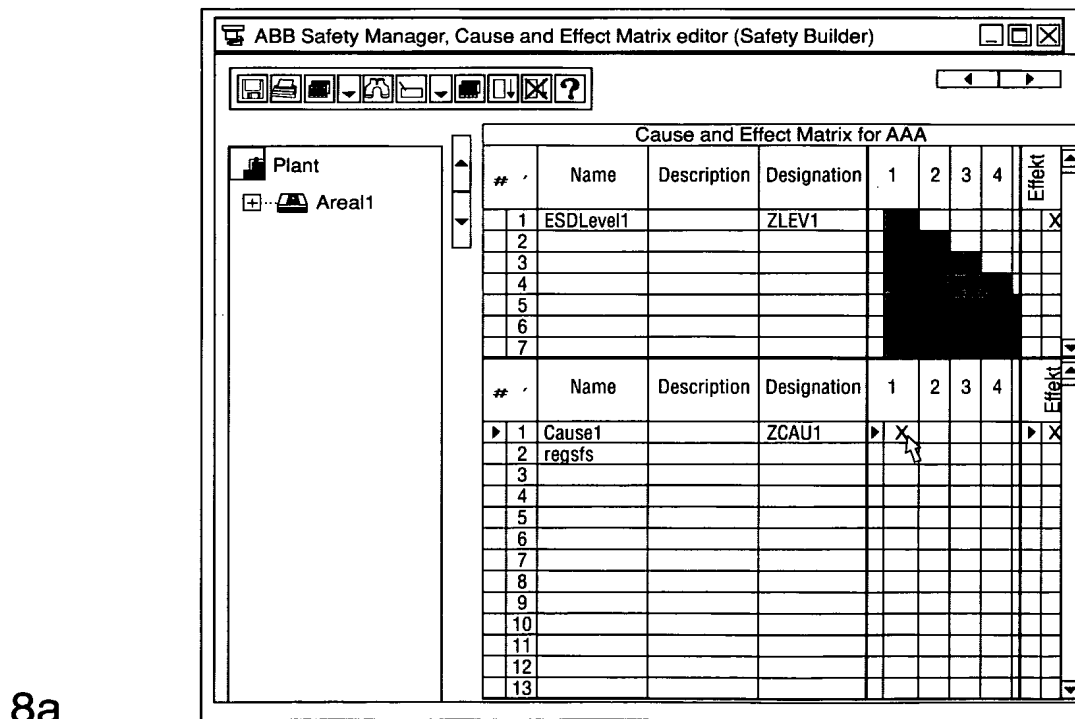
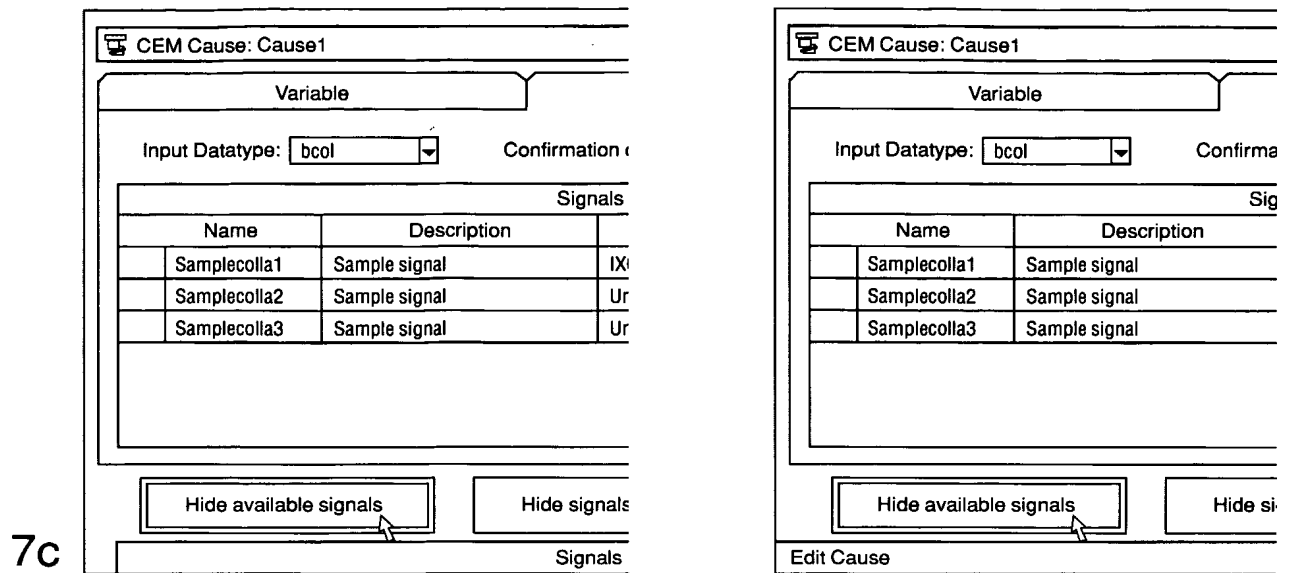


Fig. 3 cont.

ABB Safety Manager, Cause and Effect Matrix editor (Safety Builder)

Plant
+ Areal1

Cause and Effect Matrix for AAA

#	Name	Description	Designation	1	2	3	4	Effekt
1	ESDLevel1		ZLEV1					X
2								
3								
4								
5								
6								
7								
1	Cause1		ZCAU1	X				X
2	regsf							
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								

8b

#	Name	Description	Designation	1
1	ESDLevel1		ZLEV1	
2				
3				
4				
5				
6				
7				
#	Name	Description	Designation	1
1				
2	regsf			
3				
4				
5				

#	Name	Description	Designation	1
1	ESDLevel1		ZLEV1	NO
2				NO
3				NO
4				NO
5				NO
6				NO
7				NO
#	Name	Description	Designation	1
1				NO
2	regsf			NO
3				NO
4				NO
5				NO

8c

Fig. 3 cont.

ABB Safety Manager, Cause and Effect Matrix editor (Safety Builder)

Plant
+ Areal1

Cause and Effect Matrix for AAA

#	Name	Description	Designation		1	2	3	4	Effekt
1	ESDLevel1		ZLEV1	NO					X
2				NO					
3				NO					
4				NO					
5				NO					
6				NO					
7				NO					
#	Name	Description	Designation		1	2	3	4	Effekt
1	regsf			NO					X
2				NO					
3				NO					
4				NO					
5				NO					
6				NO					
7				NO					
8				NO					
9				NO					
10				NO					
11				NO					
12				NO					
13				NO					

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ABB Safety Manager, Cause and Effect Matrix editor (Safety Builder)

Digital Signals

Name	Description	Assign	Normal Value
SampleboolIn1	Sample signal	IX0.11.1.1	ND
SampleboolIn2	Sample signal	Unassigned	ND
SampleboolIn3	Sample signal	Unassigned	ND
SampleboolOut4	Sample signal	Unassigned	ND
SampleboolOut5	Sample signal	Unassigned	ND
SampleboolOut6	Sample signal	Unassigned	ND

Digital Analog

10

Fig. 3 cont.

10

ABB Safety Manager, Cause and Effect Matrix editor (Safety Builder)

Digital Signals

Name	Description	Assign	Normal Value
▶ SampleboolIn1	Sample signal	IX0.11.1.1	ND
SampleboolIn2	Sample signal	Unassigned	ND
SampleboolIn3	Sample signal	Unassigned	ND
SampleboolOut4	Sample signal	Unassigned	ND
SampleboolOut5	Sample signal	Unassigned	ND
SampleboolOut6	Sample signal	Unassigned	ND

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ABB Safety Manager, Cause and Effect Matrix editor (Safety Builder)

Controller

Controller name: CemController

IP Address: 172.16.0.0

Controller Type: AC 800M HI Create

Controller Hardware Units

- ☒ CemController.0
 - ☒ ModuleBus

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ABB Safety Manager, Cause and Effect Matrix editor (Safety Builder)

Controller

Controller name: CemController

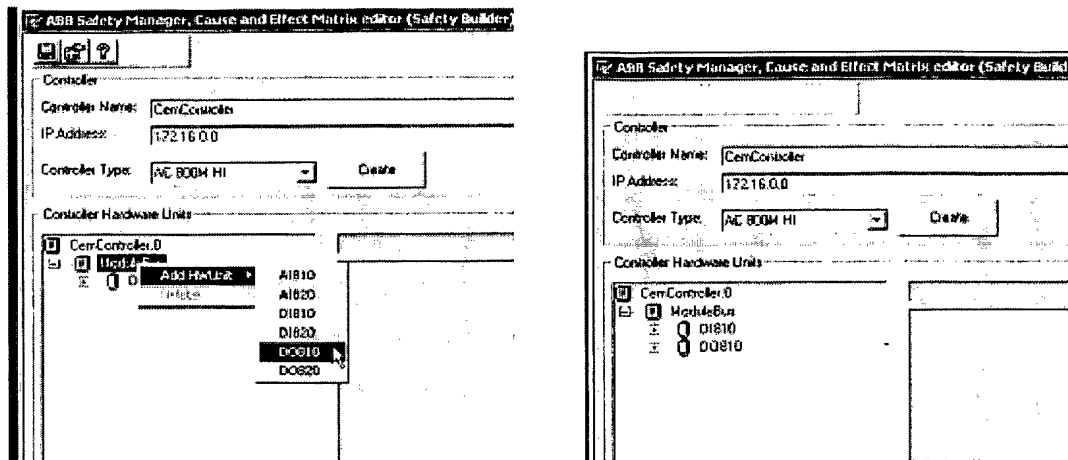
IP Address: 172.16.0.0

Controller Type: AC 800M HI Create

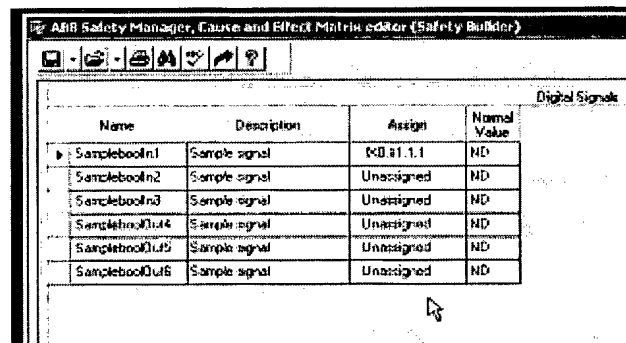
Controller Hardware Units

- ☒ CemController.0
 - ☒ ModuleBus
 - ☒ Add HW Unit ▶
 - AI810
 - AI820
 - DI810
 - DI810
 - D0810
 - D0820
 - Delete ▶

Fig. 3 cont.

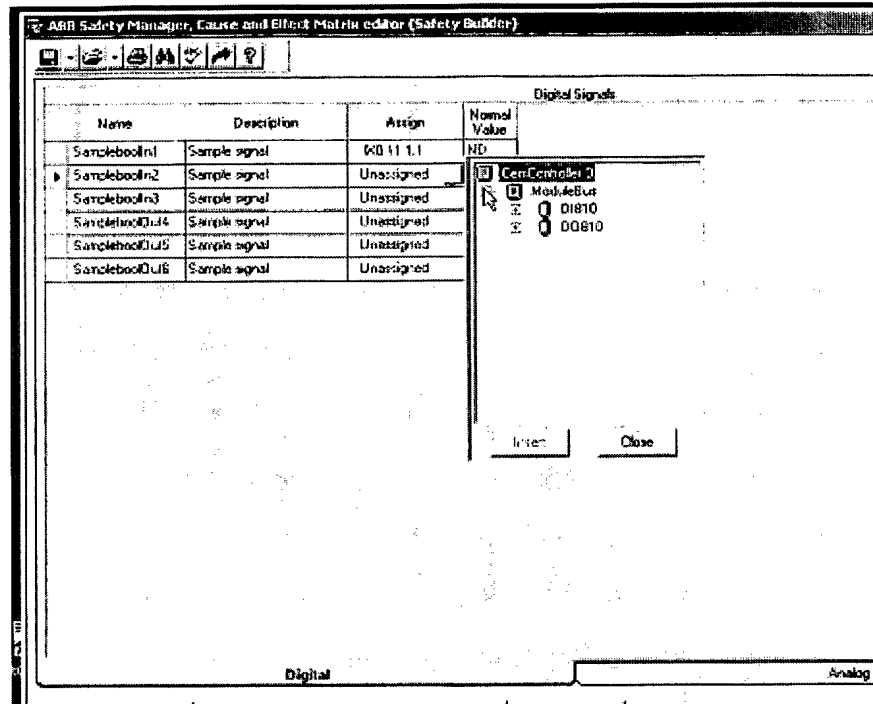


13

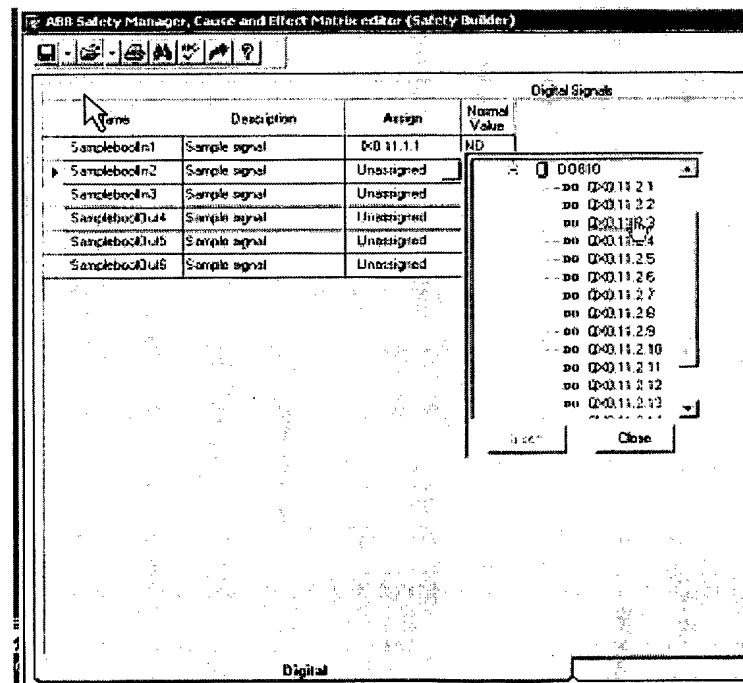


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Fig. 3 cont.

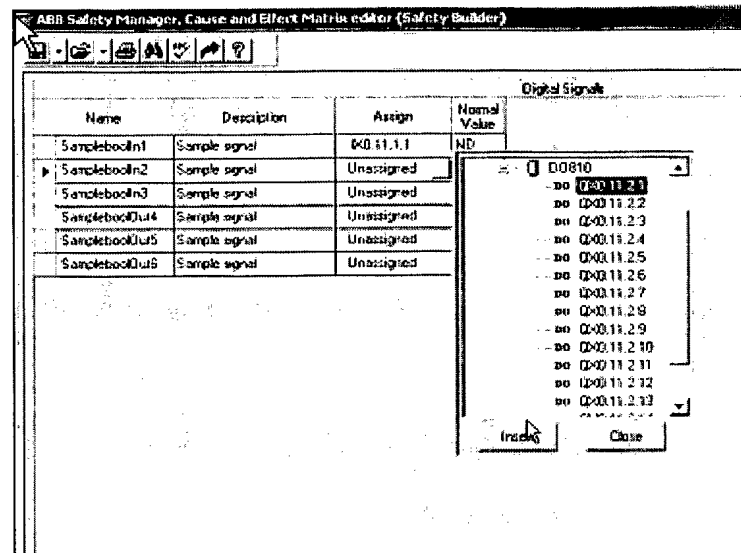


15a

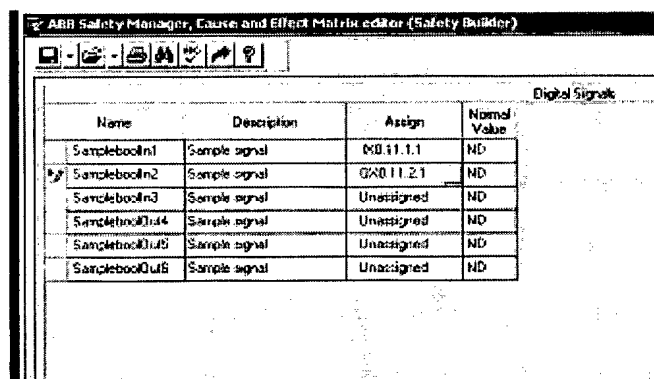


15b

Fig. 3 cont.



15c



16

Fig. 3 cont.

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ABB Safety Manager, Cause and Effect Matrix editor (Safety Builder)

Controller

Controller name: CemController

IP Address: 172.16.0.0

Controller Type: AC 800M HI Create

Controller Hardware Units

- [-] CemController.0
 - [+] [-] ModuleBus

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ABB Safety Manager, Cause and Effect Matrix editor (Safety Builder)

Controller

Controller name: CemController

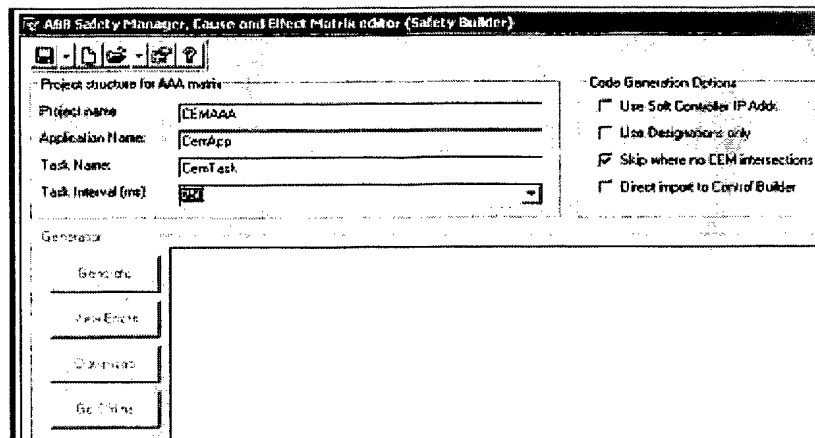
IP Address: 172.16.0.0

Controller Type: AC 800M HI Create

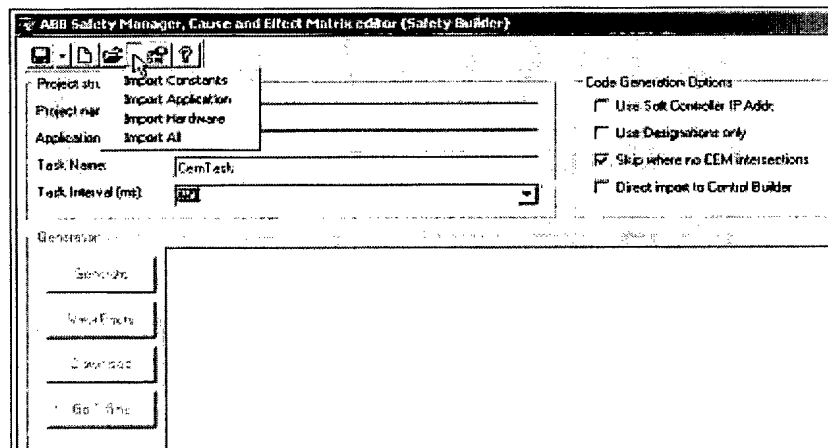
Controller Hardware Units

- [-] CemController.0
 - [+] [-] ModuleBus

Fig. 3 cont.



19



20

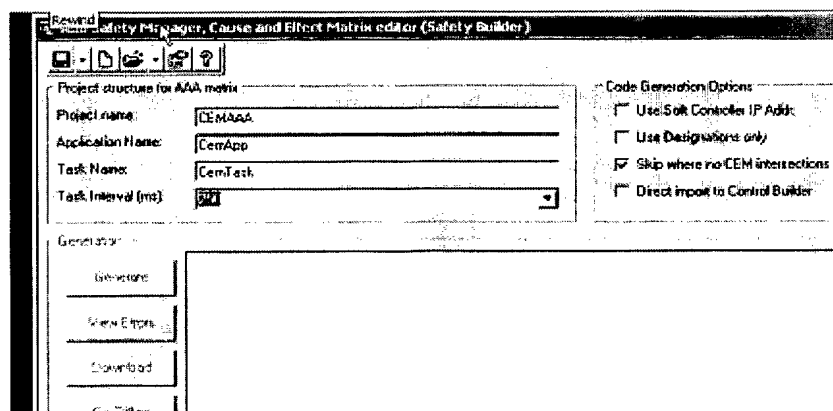


Fig. 3 cont.

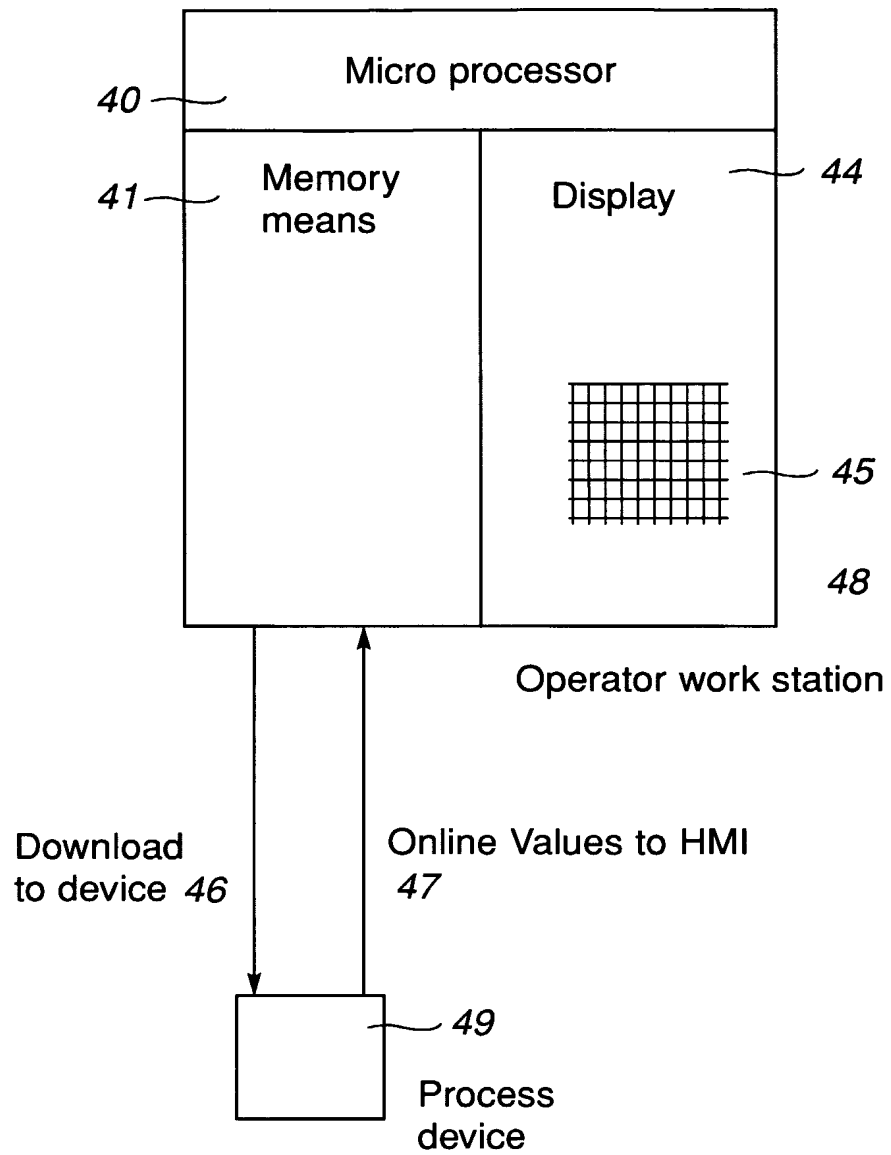


Fig. 4

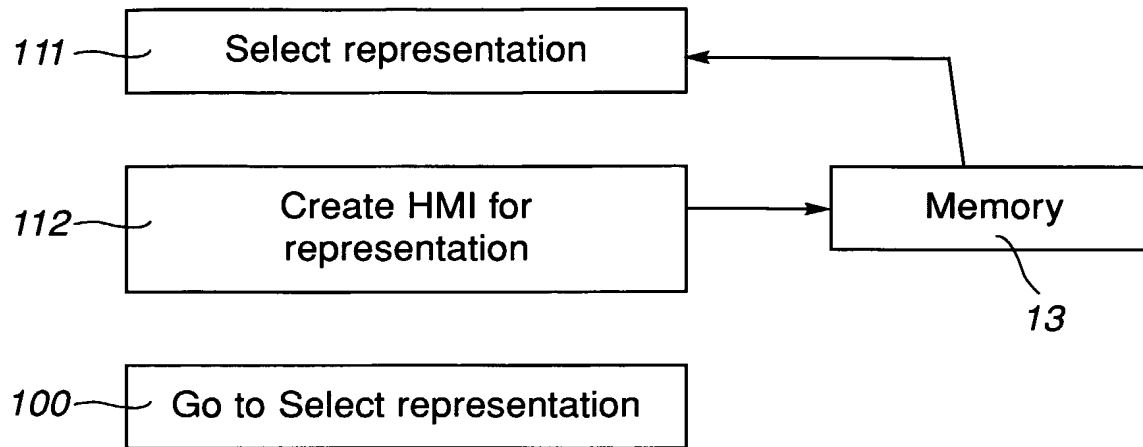


Fig. 5a

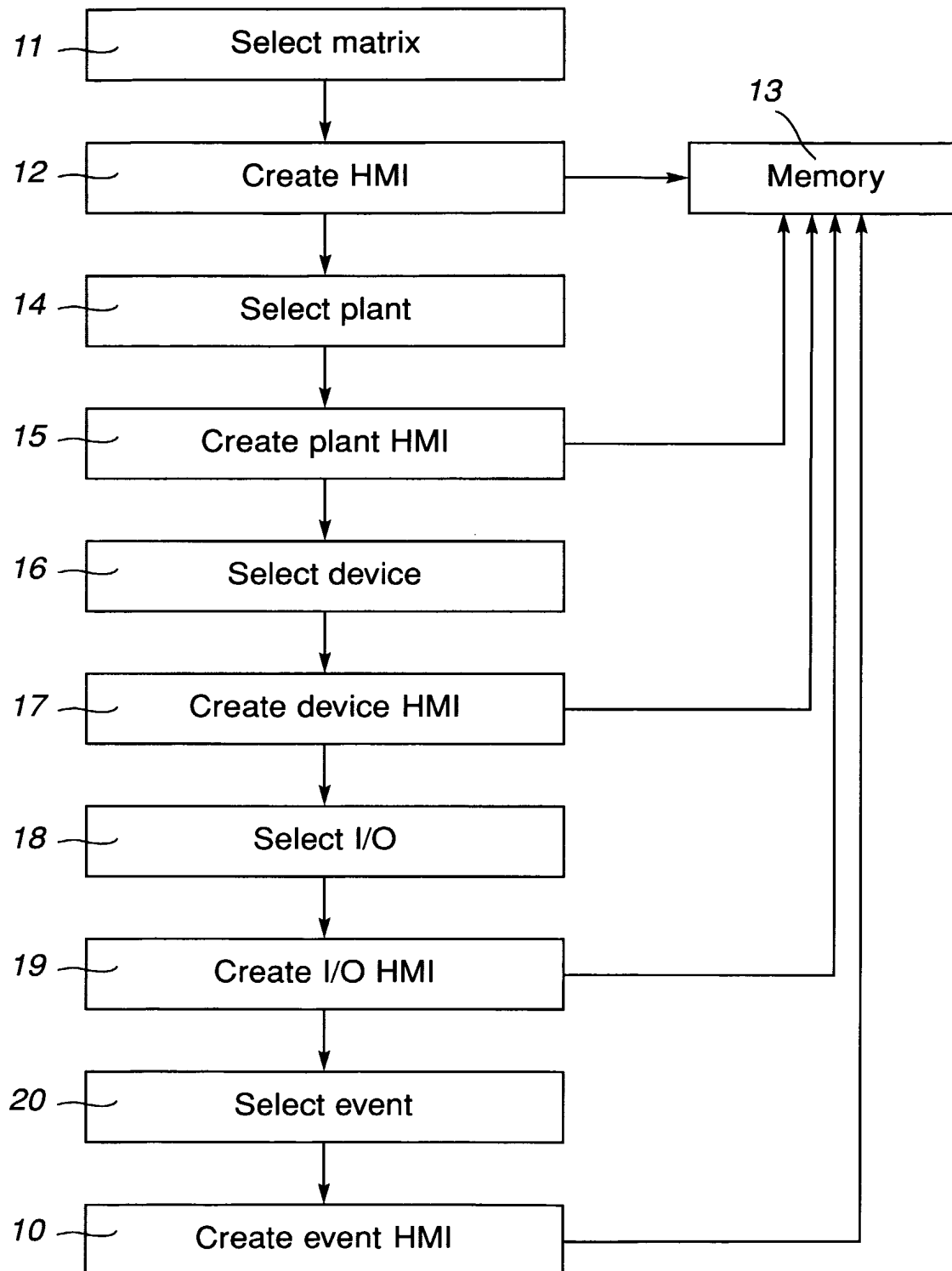


Fig. 5b

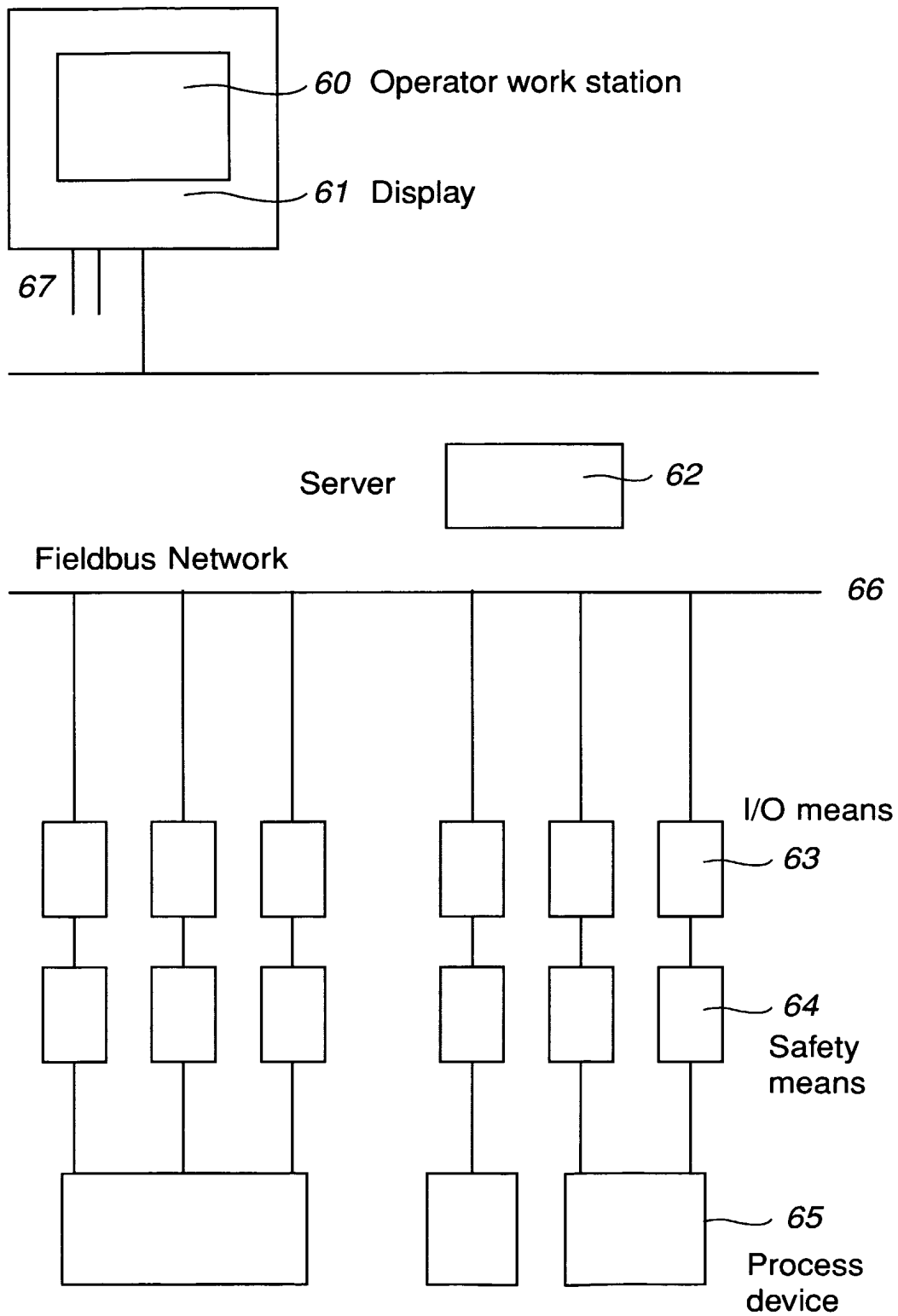


Fig. 6